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Claim 53 was rejected for being an incomplete sentence. In accordance with the Examiner's suggestion, claim 53 has been amended to recite "Ge-containing layer".

Claim 50 was rejected for reciting C as one of the possible groups from which X can be selected. Applicants respectfully note that C is recited as one option from which X can be selected.

The Examiner states that C is a member of group IVa of the periodic table. Based on the Periodic Table defined by the IUPAC, C is a member of group IVb. A copy of the IUPAC Periodic Table Applicants used is submitted herewith along with a copy of the Periodic Table from the CRC Handbook of Chemistry and Physics 75th ed. showing the new IUPAC notation, the previous IUPAC notation, and the CAS notation of the periodic groups. Withdrawal of the rejection is respectfully requested.

Claims 50-52, 55-58, 60 and 74 are rejected under 35 USC 102(b) as being anticipated by Yoshitomi et al. (JP 63-171453). This rejection is respectfully traversed.

Yoshitomi is directed to a magneto-optical recording medium and, thus, does not teach or suggest the phase-change recording layer of the present claims.

Claims 50-52, 55-58, 60 and 74 are rejected under 35 USC 102(b) as being anticipated by Kinou et al. (JP 03-248338). This rejection is respectfully traversed.

Claim 50 is directed to an optical information recording medium comprising a phase-change recording layer and a Ge-containing layer comprising either one selected from the group consisting of GeXN and GeXON. X is one or more elements selected from the following groups: IIIa, IVa, Va, VIa, VIIa, VIII, Ib and IIb, and C.

Based on the IUPAC Periodic table used by the Applicants, the group to which Si belongs is not included. Thus, Kinou does not anticipate the claims by disclosing the use of GeSiZrN. Additionally, Kinou does not teach or suggest the phase-change recording layer of the present claims.

Claims 50-52, 55-58, 63, 64, and 74 are rejected under 102(b) as being anticipated by Yoshioka et al. (JP 04-052188). This rejection is respectfully traversed.

The rejection refers to the fact the Yoshioka discloses an SbGeTe recording layer. While the present invention does disclose a Ge-containing recording layer, based on the periodic table used by the Applicants, the present claims do not require the use of an SbGeTe

recording layer. Sb and Te are not members of any of the groups recited by the claims. Thus, Yoshioka fails to anticipate the claimed invention.

Claims 1, 2, 4-9, 12, 19-31, 50-52, 55-58, 63, 64, and 74 are rejected under 35 USC 102(b) as being anticipated by Yoshioka et al. (U.S. Patent 5,194,363). This rejection is respectfully traversed.

Yoshioka (US '363) discloses an SbGeTe recording layer which differs from the recording layer of the claimed invention. Unlike US '363, the claimed invention does not require a recording layer that includes Sb and Te.

Claims 50-52, 55-58, 60, and 74 are rejected under 35 USC 102(b) as being anticipated by Tsutsumi et al. (JP 02-037548), by JP 01-276453, by Shindo et al. (JP 05-274726), and by JP 04-069833. These rejections are respectfully traversed.

Tsutsumi, JP 01-276453, Shindo, and JP 04-06983 are all directed to a magneto-optical recording medium and, thus, does not teach or suggest the phase-change recording layer of the present claims.

Claims 1-9, 12, 19-31, 50-52, 55-58, 63, 64, and 74 are rejected under 35 USC 103(a) as being unpatentable over Yoshioka et al. (US '363) in view of Yoshioka et al. (JP 04-052188). This rejection is respectfully traversed.

The rejection states that it would have been obvious to one skilled in the art to provide a GeN or GeNO layer on both sides of the optical recording medium of US '363 based on the showing by JP 04-052188 that this layer is beneficial between the recording layer and the upper dielectric layer.

The combination of Yoshioka US '363 and Yoshioka JP 04-052188 does not suggest at the claimed invention as neither reference teaches or suggest a barrier layer including GeN or GeNO and at least one of the following elements: Al, B, Ba, Bi, C, Ca, Ce, Cr, Dy, Eu, Ga, Hf, In, K, La, Mn, Nb, Ni, Pb, Pd, Si, Sn, Ta, Ti, V, W, Yb, Zn, and Zr.

Furthermore, Yoshioka JP 04-052188 defines the optical recording medium as being comprised of a first dielectric layer, a record thin film, a nitride layer, a second dielectric layer, and a reflecting layer. The record film layer of JP 04-052188 is analogous to the active layer of US '363. Yoshioka JP 04-052188 does not teach or suggest a GeN or a GeNO layer on both sides of the recording medium.

Claims 1-31, 50-64 and 74 are rejected under 35 USC 103(a) as being unpatentable over Yoshioka et al. (US '363) in view of Yoshioka et al. (JP 04-052188) and either Yoshitomi et al. (JP 63-171453), Kinou et al. (JP 03-248338), or Shindo et al. (JP 05-274726). This rejection is respectfully traversed.

The rejection states that it would have been obvious to include additives, such as Al, Si, H, and Zr into the GeN and GeNO protective layers of the invention of Yoshioka US '363 as modified by Yoshioka JP 04-052188, based upon the disclosure of equivalent function as protective layers within either Yoshitomi, Kinou, or Shindo.

Yoshioka discloses an optical information recording medium comprising a substrate, a first dielectric layer, an active layer formed on top of the first dielectric layer, a second dielectric layer formed on top of the active layer, and a reflecting layer formed on top of the second dielectric layer (col. 3, lines 31-46). The active layer is a phase change material capable of absorbing energy and being converted between a substantially amorphous state and a substantially crystalline state (abstract).

From this disclosure it is evident that the active layer of US '363 is equivalent to the recording layer and not the barrier layer of the claimed invention. US '363 does not include a barrier layer as part of the recording medium structure. US '363 does disclose two dielectric layers sandwiching the active layer which could possibly be construed as protective layers, however their composition is disclosed as being a combination of ZnS or SiO<sub>2</sub> as opposed to GeN or GeNO as the rejection has suggested.

Additionally, Yoshioka JP 04-052188, as discussed previously, does not teach or suggest a protective layer comprising GeN or GeNO being included on either side of the recording medium. The combination of Yoshioka US '363 and Yoshioka JP 04-052188 does not suggest at the claimed invention. Furthermore, Yoshitomi, Kinou, or Shindo do not remedy this deficiency. Applicants do not concede the applicability of Yoshitomi, Kinou, or Shindo to claims 1-31, 50-64 and 74.

Claims 1-31, 50-64, and 74 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-33 of U.S. Patent 5,914,214. This rejection is respectfully traversed.

Applicants provide below a Terminal Disclaimer under 37 CFR 1.321(c) obviating the double patenting rejection. Applicants do not concede the correctness of the reasoning of the rejection.

Claims 1-31, 50-64, and 74 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12, 14-15, 25-27, 30-42, and 54-55 of co-pending Application No. 09/050,762. This rejection is respectfully traversed. Applicants note that Application No. 09/050,762 is not issuing.

#### TERMINAL DISCLAIMER

Petitioner, Matsushita Electric Industrial Co., Ltd., the owner of the entire right, title and interest in the present application filed on September 30, 1999 by virtue of Assignment recorded at Reel 010432, Frame(s) 0867 and U.S. Patent 5,914,214, through the undersigned attorney of record, hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the above-identified application, which would extend beyond the expiration date of the full statutory term of the patent to issue from U.S. Patent No. 5,914,214 and hereby agrees that any patent so granted on the above-identified application shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to the patent to issue from U.S. Patent No. 5,914,214, this agreement to run with any patent granted on the above-identified application and to be binding upon the grantee, its successors, or assigns.

In making the above disclaimer, Petitioner does not disclaim the terminal part of any patent granted on the above-identified application that would extend to the full statutory term as presently shortened by any terminal disclaimer of the patent to issue from U.S. Patent No. 5,914,214 in the event that any such issued patent: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid, is statutorily disclaimed in whole or terminally

disclaimed under 37 CFR 1.321(a), has all claims cancelled by a reexamination certification, or is otherwise terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer, except for the separation of legal title stated above.

For submissions on behalf of an organization (e.g. corporation, partnership, university, government agency, etc.), the undersigned (whose title is supplied below) is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


**In Conclusion**

In view of the above, favorable reconsideration is requested in the form of a Notice of Allowance.

Respectfully Submitted,

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Dated 10/19/2000

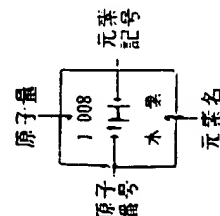
By   
John J. Gresens  
Reg. No. 33,112  
JJG/CDS



元素の周期表

1 (1A)		2 (2A)		3 (3A)		4 (4A)		5 (5A)		6 (6A)		7 (7A)		8 (8)		9 (9)		10 (10)		11 (11B)		12 (12B)		13 (13B)		14 (14B)		15 (15B)		16 (16B)		17 (17B)		18 (18B)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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元素の原子番号(1000)の信頼度は、有効数字の4桁目まで1以内であるが、11を付したものは±2以内、12を付したものは±3以内である。  
安定同位体がなく、特定の天然同位体組成を示さない元素については、その元素のよく知られた放射性同位体のうちから1種を選んでその質量数を( )内に示した。



PERIODIC TABLE OF THE ELEMENTS

1 Group IA		2 Group IIA		3 IIIA		4 IVA		5 VA		6 VIA		7 VIIA		8 VIII		9 VIII		10 VIII		11 IB		12 IIB		13 IIIB		14 IVB		15 VB		16 VIB		17 VIIB		18 VIIIA		Shell																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
1 H 1.00794 1	+1	3 Li 6.941 2.2	+1	5 B 10.811 2.3	+3	7 N 14.00674 2.5	+2	9 F 18.9984032 2.7	-1	11 Na 22.989768 2.8-1	+1	13 Al 26.981539 2.8-3	+3	15 P 30.973762 2.8-5	+3	17 Cl 35.4527 2.8-7	+1	19 K 39.0983 8.8-1	+1	21 Sc 44.955910 8.9-2	+3	23 V 50.9415 8.1-2	+3	25 Mn 54.938045 8.1-2	+3	27 Co 58.93320 8.1-2	+3	29 Cu 63.546 8.1-2	+2	31 Ga 69.723 8.1-2	+3	33 As 74.92159 8.1-2	+3	35 Br 79.904 8.1-2	+1	37 Rb 85.4678 18.8-1	+1	39 Y 88.90585 18.9-2	+3	41 Nb 92.90638 18.1-2	+3	43 Tc 98.9062 18.1-2	+3	45 Rh 101.07 18.1-2	+3	47 Ag 107.8682 18.1-2	+1	49 In 114.818 18.1-3	+3	51 Sb 121.760 18.1-3	+3	53 I 126.90447 18.1-3	+1	55 Cs 132.90543 18.8-1	+1	57 La 138.9055 18.9-2	+3	59 Pr 140.90765 18.9-2	+3	61 Pm 144.24 18.9-2	+3	63 Eu 151.965 18.9-2	+3	65 Gd 157.25 18.9-2	+3	67 Ho 164.93032 18.9-2	+3	69 Tm 168.93421 18.9-2	+3	71 Lu 174.967 18.9-2	+3	73 Yb 173.04 18.9-2	+3	75 Er 167.26 18.9-2	+3	77 Tb 158.92534 18.9-2	+3	79 Dy 162.50 18.9-2	+3	81 Ho 164.93032 18.9-2	+3	83 Er 167.26 18.9-2	+3	85 Tm 168.93421 18.9-2	+3	87 Yb 173.04 18.9-2	+3	89 Lu 174.967 18.9-2	+3	91 Pr 140.90765 18.9-2	+3	93 Nd 144.24 18.9-2	+3	95 Pm 144.24 18.9-2	+3	97 Sm 150.36 18.9-2	+3	99 Eu 151.965 18.9-2	+3	101 Gd 157.25 18.9-2	+3	103 Tb 158.92534 18.9-2	+3	105 Dy 162.50 18.9-2	+3	107 Ho 164.93032 18.9-2	+3	109 Er 167.26 18.9-2	+3	111 Tm 168.93421 18.9-2	+3	113 Yb 173.04 18.9-2	+3	115 Lu 174.967 18.9-2	+3	117 Hf 178.49 18.9-2	+3	119 Ta 180.9479 18.9-2	+3	121 W 183.84 18.9-2	+3	123 Re 186.207 18.9-2	+3	125 Os 190.23 18.9-2	+3	127 Ir 192.22 18.9-2	+3	129 Pt 195.08 18.9-2	+3	131 Au 196.96654 18.9-2	+3	133 Hg 200.59 18.9-2	+3	135 Tl 204.3833 18.9-2	+3	137 Pb 207.2 18.9-2	+3	139 Bi 208.98037 18.9-2	+3	141 Po 209 18.9-2	+3	143 At 210 18.9-2	+3	145 Rn 222 18.9-2	+3	147 Fr 223 18.9-2	+3	149 Ra 226.025 18.9-2	+3	151 Ac 227.028 18.9-2	+3	153 Th 232.0381 18.9-2	+3	155 Pa 231.03588 18.9-2	+3	157 U 238.02891 18.9-2	+3	159 Np 237.048 18.9-2	+3	161 Pu 244 18.9-2	+3	163 Am 243 18.9-2	+3	165 Cm 247 18.9-2	+3	167 Bk 247 18.9-2	+3	169 Cf 251 18.9-2	+3	171 Es 252 18.9-2	+3	173 Fm 257 18.9-2	+3	175 Md 258 18.9-2	+3	177 No 259 18.9-2	+3	179 Lr 260 18.9-2	+3	181 La 138.9055 18.9-2	+3	183 Ce 140.90765 18.9-2	+3	185 Pr 140.90765 18.9-2	+3	187 Nd 144.24 18.9-2	+3	189 Pm 144.24 18.9-2	+3	191 Sm 150.36 18.9-2	+3	193 Eu 151.965 18.9-2	+3	195 Gd 157.25 18.9-2	+3	197 Tb 158.92534 18.9-2	+3	199 Dy 162.50 18.9-2	+3	201 Ho 164.93032 18.9-2	+3	203 Er 167.26 18.9-2	+3	205 Tm 168.93421 18.9-2	+3	207 Yb 173.04 18.9-2	+3	209 Lu 174.967 18.9-2	+3	211 Hf 178.49 18.9-2	+3	213 Ta 180.9479 18.9-2	+3	215 W 183.84 18.9-2	+3	217 Re 186.207 18.9-2	+3	219 Os 190.23 18.9-2	+3	221 Ir 192.22 18.9-2	+3	223 Pt 195.08 18.9-2	+3	225 Au 196.96654 18.9-2	+3	227 Hg 200.59 18.9-2	+3	229 Tl 204.3833 18.9-2	+3	231 Pb 207.2 18.9-2	+3	233 Bi 208.98037 18.9-2	+3	235 Po 209 18.9-2	+3	237 At 210 18.9-2	+3	239 Rn 222 18.9-2	+3	241 Fr 223 18.9-2	+3	243 Ra 226.025 18.9-2	+3	245 Ac 227.028 18.9-2	+3	247 Th 232.0381 18.9-2	+3	249 Pa 231.03588 18.9-2	+3	251 U 238.02891 18.9-2	+3	253 Np 237.048 18.9-2	+3	255 Pu 244 18.9-2	+3	257 Am 243 18.9-2	+3	259 Cm 247 18.9-2	+3	261 Bk 247 18.9-2	+3	263 Cf 251 18.9-2	+3	265 Es 252 18.9-2	+3	267 Fm 257 18.9-2	+3	269 Md 258 18.9-2	+3	271 No 259 18.9-2	+3	273 Lr 260 18.9-2	+3	275 La 138.9055 18.9-2	+3	277 Ce 140.90765 18.9-2	+3	279 Pr 140.90765 18.9-2	+3	281 Nd 144.24 18.9-2	+3	283 Pm 144.24 18.9-2	+3	285 Sm 150.36 18.9-2	+3	287 Eu 151.965 18.9-2	+3	289 Gd 157.25 18.9-2	+3	291 Tb 158.92534 18.9-2	+3	293 Dy 162.50 18.9-2	+3	295 Ho 164.93032 18.9-2	+3	297 Er 167.26 18.9-2	+3	299 Tm 168.93421 18.9-2	+3	301 Yb 173.04 18.9-2	+3	303 Lu 174.967 18.9-2	+3	305 Hf 178.49 18.9-2	+3	307 Ta 180.9479 18.9-2	+3	309 W 183.84 18.9-2	+3	311 Re 186.207 18.9-2	+3	313 Os 190.23 18.9-2	+3	315 Ir 192.22 18.9-2	+3	317 Pt 195.08 18.9-2	+3	319 Au 196.96654 18.9-2	+3	321 Hg 200.59 18.9-2	+3	323 Tl 204.3833 18.9-2	+3	325 Pb 207.2 18.9-2	+3	327 Bi 208.98037 18.9-2	+3	329 Po 209 18.9-2	+3	331 At 210 18.9-2	+3	333 Rn 222 18.9-2	+3	335 Fr 223 18.9-2	+3	337 Ra 226.025 18.9-2	+3	339 Ac 227.028 18.9-2	+3	341 Th 232.0381 18.9-2	+3	343 Pa 231.03588 18.9-2	+3	345 U 238.02891 18.9-2	+3	347 Np 237.048 18.9-2	+3	349 Pu 244 18.9-2	+3	351 Am 243 18.9-2	+3	353 Cm 247 18.9-2	+3	355 Bk 247 18.9-2	+3	357 Cf 251 18.9-2	+3	359 Es 252 18.9-2	+3	361 Fm 257 18.9-2	+3	363 Md 258 18.9-2	+3	365 No 259 18.9-2	+3	367 Lr 260 18.9-2	+3	369 La 138.9055 18.9-2	+3	371 Ce 140.90765 18.9-2	+3	373 Pr 140.90765 18.9-2	+3	375 Nd 144.24 18.9-2	+3	377 Pm 144.24 18.9-2	+3	379 Sm 150.36 18.9-2	+3	381 Eu 151.965 18.9-2	+3	383 Gd 157.25 18.9-2	+3	385 Tb 158.92534 18.9-2	+3	387 Dy 162.50 18.9-2	+3	389 Ho 164.93032 18.9-2	+3	391 Er 167.26 18.9-2	+3	393 Tm 168.93421 18.9-2	+3	395 Yb 173.04 18.9-2	+3	397 Lu 174.967 18.9-2	+3	399 Hf 178.49 18.9-2	+3	401 Ta 180.9479 18.9-2	+3	403 W 183.84 18.9-2	+3	405 Re 186.207 18.9-2	+3	407 Os 190.23 18.9-2	+3	409 Ir 192.22 18.9-2	+3	411 Pt 195.08 18.9-2	+3	413 Au 196.96654 18.9-2	+3	415 Hg 200.59 18.9-2	+3	417 Tl 204.3833 18.9-2	+3	419 Pb 207.2 18.9-2	+3	421 Bi 208.98037 18.9-2	+3	423 Po 209 18.9-2	+3	425 At 210 18.9-2	+3	427 Rn 222 18.9-2	+3	429 Fr 223 18.9-2	+3	431 Ra 226.025 18.9-2	+3	433 Ac 227.028 18.9-2	+3	435 Th 232.0381 18.9-2	+3	437 Pa 231.03588 18.9-2	+3	439 U 238.02891 18.9-2	+3	441 Np 237.048 18.9-2	+3	443 Pu 244 18.9-2	+3	445 Am 243 18.9-2	+3	447 Cm 247 18.9-2	+3	449 Bk 247 18.9-2	+3	451 Cf 251 18.9-2	+3	453 Es 252 18.9-2	+3	455 Fm 257 18.9-2	+3	457 Md 258 18.9-2	+3	459 No 259 18.9-2	+3	461 Lr 260 18.9-2	+3	463 La 138.9055 18.9-2	+3	465 Ce 140.90765 18.9-2	+3	467 Pr 140.90765 18.9-2	+3	469 Nd 144.24 18.9-2	+3	471 Pm 144.24 18.9-2	+3	473 Sm 150.36 18.9-2	+3	475 Eu 151.965 18.9-2	+3	477 Gd 157.25 18.9-2	+3	479 Tb 158.92534 18.9-2	+3	481 Dy 162.50 18.9-2	+3	483 Ho 164.93032 18.9-2	+3	485 Er 167.26 18.9-2	+3	487 Tm 168.93421 18.9-2	+3	489 Yb 173.04 18.9-2	+3	491 Lu 174.967 18.9-2	+3	493 Hf 178.49 18.9-2	+3	495 Ta 180.9479 18.9-2	+3	497 W 183.84 18.9-2	+3	499 Re 186.207 18.9-2	+3	501 Os 190.23 18.9-2	+3	503 Ir 192.22 18.9-2	+3	505 Pt 195.08 18.9-2	+3	507 Au 196.96654 18.9-2	+3	509 Hg 200.59 18.9-2	+3	511 Tl 204.3833 18.9-2	+3	513 Pb 207.2 18.9-2	+3	515 Bi 208.98037 18.9-2	+3	517 Po 209 18.9-2	+3	519 At 210 18.9-2	+3	521 Rn 222 18.9-2	+3	523 Fr 223 18.9-2	+3	525 Ra 226.025 18.9-2	+3	527 Ac 227.028 18.9-2	+3	529 Th 232.0381 18.9-2	+3	531 Pa 231.03588 18.9-2	+3	533 U 238.02891 18.9-2	+3	535 Np 237.048 18.9-2	+3	537 Pu 244 18.9-2	+3	539 Am 243 18.9-2	+3	541 Cm 247 18.9-2	+3	543 Bk 247 18.9-2	+3	545 Cf 251 18.9-2	+3	547 Es 252 18.9-2	+3	549 Fm 257 18.9-2	+3	551 Md 258 18.9-2	+3	553 No 259 18.9-2	+3	555 Lr 260 18.9-2	+3	557 La 138.9055 18.9-2	+3	559 Ce 140.90765 18.9-2	+3	561 Pr 140.90765 18.9-2	+3	563 Nd 144.24 18.9-2	+3	565 Pm 144.24 18.9-2	+3	567 Sm 150.36 18.9-2	+3	569 Eu 151.965 18.9-2	+3	571 Gd 157.25 18.9-2	+3	573 Tb 158.92534 18.9-2	+3	575 Dy 162.50 18.9-2	+3	577 Ho 164.93032 18.9-2	+3	579 Er 167.26 18.9-2	+3	581 Tm 168.93421 18.9-2	+3	583 Yb 173.04 18.9-2	+3	585 Lu 174.967 18.9-2	+3	587 Hf 178.49 18.9-2	+3	589 Ta 180.9479 18.9-2	+3	591 W 183.84 18.9-2	+3	593 Re 186.207 18.9-2	+3	595 Os 190.23 18.9-2	+3	597 Ir 192.22 18.9-2	+3	599 Pt 195.08 18.9-2	+3	601 Au 196.96654 18.9-2	+3	603 Hg 200.59 18.9-2	+3	605 Tl 204.3833 18.9-2	+3	607 Pb 207.2 18.9-2	+3	609 Bi 208.98037 18.9-2	+3	611 Po 209 18.9-2	+3	613 At 210 18.9-2	+3	615 Rn 222 18.9-2	+3	617 Fr 223 18.9-2	+3	619 Ra 226.025 18.9-2	+3	621 Ac 227.028 18.9-2	+3	623 Th 232.0381 18.9-2	+3	625 Pa 231.03588 18.9-2	+3	627 U 238.02891 18.9-2	+3	629 Np 237.048 18.9-2	+3	631 Pu 244 18.9-2	+3	633 Am 243 18.9-2	+3	635 Cm 247 18.9-2	+3	637 Bk 247 18.9-2